A Mesolithic site at Streat Lane, Streat, East Sussex

by Chris Butler

During 1996/7 a Mesolithic site was discovered at Streat, East Sussex. Four pits containing large quantities of fire-fractured flint were excavated, together with a possible temporary shelter. The flintwork assemblage of over 3000 pieces included microliths and a small number of expedient implements. Radiocarbon dates indicate that the site was being used during the later seventh millennium BC.

INTRODUCTION

In May 1996 Plumpton Agricultural College submitted a planning application to create a fishing lake in a field adjacent to Streat Lane, Streat, East Sussex at TQ352146 (Fig. 1). An archaeological condition was attached to the planning consent allowing access to the site before and during the work, and the Mid Sussex Field Archaeological Team was nominated by the East Sussex County Archaeologist to investigate the site ahead of the construction work.

The site is situated at 50 m OD on a south-facing slope, at the northern edge of the Gault Clay. The Folkestone Beds of the Lower Greensand are immediately north of the site, and here form a small ridge of higher ground blocking views out into the Weald. There are local Alluvial and Head deposits associated with the tributaries of the River Ouse. One such tributary flows northwards immediately to the east of the site. This stream rises from a spring located at The Gote, just over 1 km south of the site, at the foot of the north scarp slope of the South Downs.

THE FIELDWALKING SURVEY AND TEST-PITTING

An initial fieldwalking survey of the ploughed field was carried out in September 1996. The results of this survey produced a background scatter of prehistoric flintwork across the whole field ranging in date from the Mesolithic period through to the Bronze Age. In the centre of the field was a small concentration of later prehistoric flintwork, probably of Bronze Age date, whilst a fragment of a leaf-shaped arrowhead hinted at earlier activity. At the east end of the field was a much larger concentration of Mesolithic flintwork, together with a matching concentration of fire-fractured flint (Butler 1998). A total collection survey was subsequently carried out at the east end of the field, which produced 152 pieces of worked flint, predominantly Mesolithic, together with 281 pieces of fire-fractured flint.

After the fieldwalking survey had been completed, nine test pits were excavated over the concentration of Mesolithic flintwork and fire-fractured flint (Fig. 2). The test pits were excavated by hand, and were initially each 1 m^2. Trenches C and F on the east side did not produce any features, and were therefore recorded and backfilled. Each of the remaining trenches located either features or concentrations of fire-fractured flint. Some of the test pits were extended, and a new test pit (M) was inserted to confirm that the fire-fractured flint in Test Pit E extended through to Test Pit G and was therefore probably the same feature. It was also noted that fire-fractured flint was eroding out of the edges of the adjacent stream, so it is possible that the site extends as far as the stream on its eastern side.

It was becoming apparent that we were dealing with a large site with multiple large features. The test-pitting strategy had helped to establish this, but the most appropriate method of continuing the excavation was to open up a much larger area encompassing all the existing test pits, which was arranged for the following spring.

THE EXCAVATION

Work commenced at the site again in April 1997, and a JCB was used to extend the test pits into a single trench measuring 11 m by 8 m (Fig. 2). The JCB removed only the upper ploughsoil, leaving the

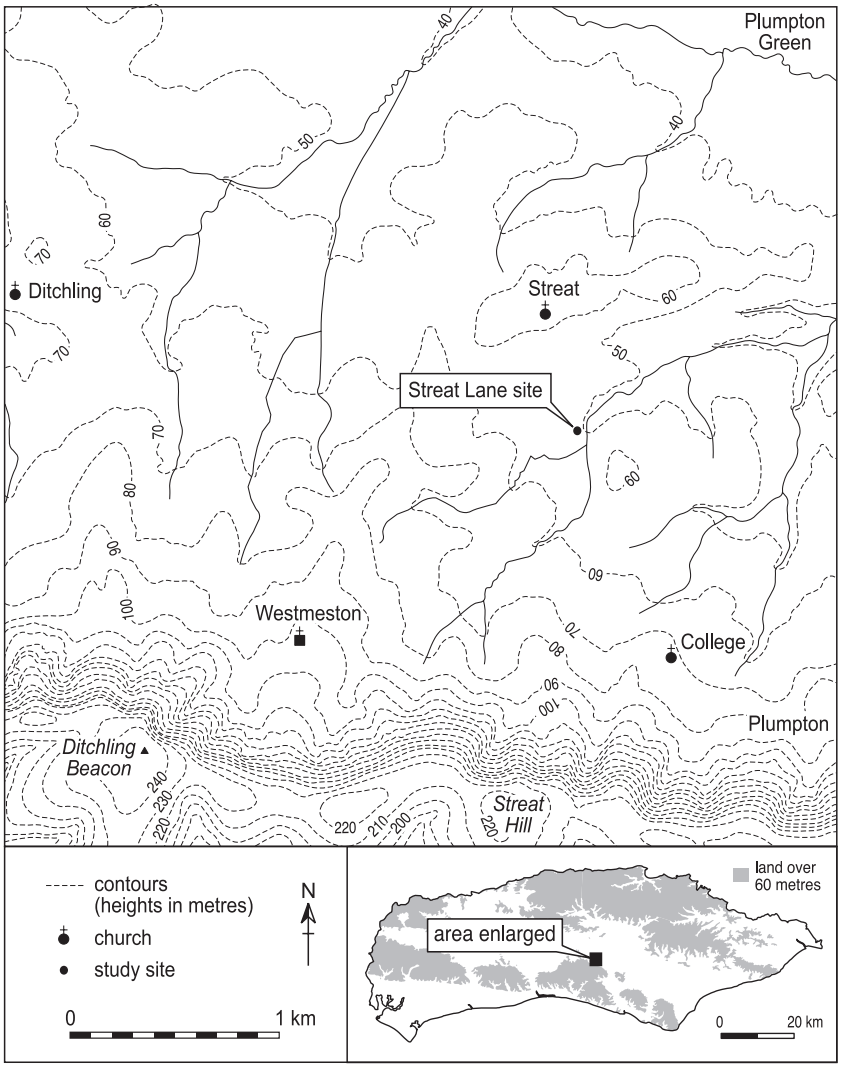

Fig. 1. Location map showing the relationship of the site with the South Downs and streams.

lower ploughsoil and underlying unploughed silty clay layer (B horizon), which were then removed by hand. The trench was then trowelled to expose the complete extent of the features contained within it. Below the ploughsoil was a number of shallow rounded cuts, and one larger sub-rectangular cut (Context 55) which were all Post Medieval, most probably being root disturbance dating from the nineteenth-/twentieth-century woodland phase. A modern plastic land drain also cut through the trench on its northwest side, and a ceramic land drain cut through the trench in the southwest corner. Although a few sherds of later prehistoric and more recent pottery were found in the topsoil, there were no other later features or finds.

The excavated Mesolithic features comprised four pits, a number of other shallow cuts and a possible shelter; these are each described in detail below.

Unfortunately, the excavation was brought to a premature end by bad weather and the ensuing extensive flooding of the trench in the autumn of 1997, although most of the features had either been fully excavated or substantially sampled by this time.

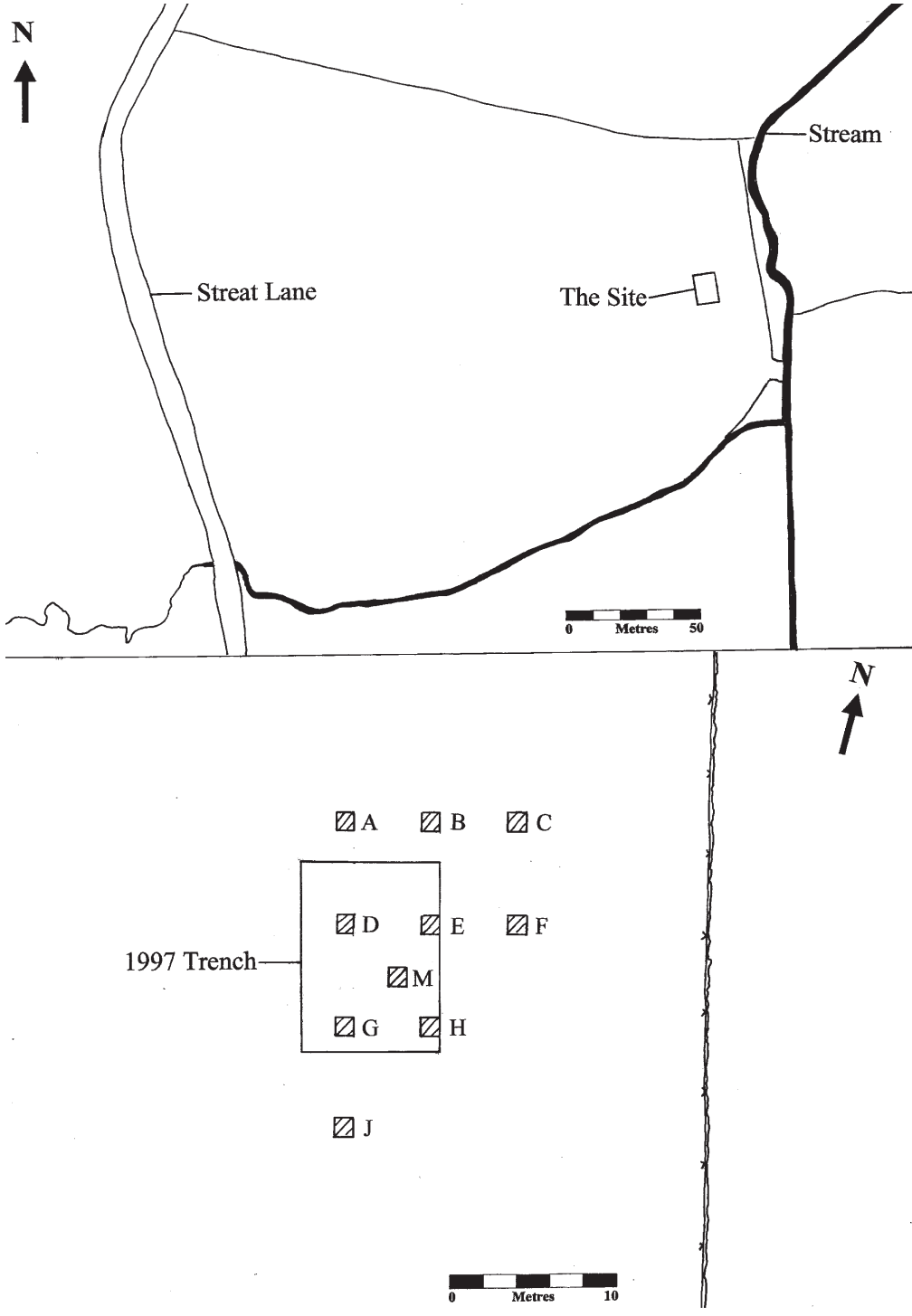

Fig. 2. Location of the site, and position of the test pits with the outline of main trench superimposed.

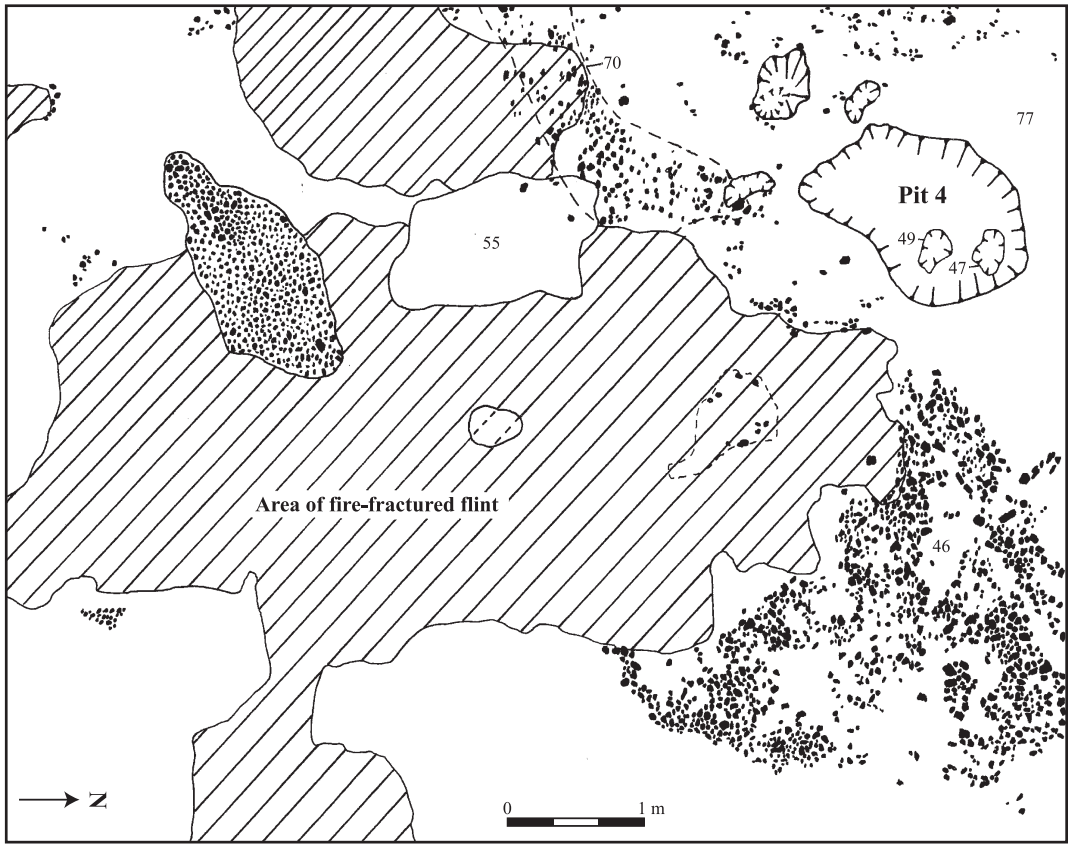

Fig. 3. Plan of the trench showing initial features, Pit 4, and spread of fire-fractured flints (key as Fig. 6).

THE EXCAVATED FEATURES

PIT 1 (CONTEXT 93)

This was the largest cut feature, and was located centrally in the trench. When first discovered it appeared to be an extensive spread or mound of fire-fractured flint (Fig. 3), and initially three sections were cut though it to establish its true extent and nature (Fig. 5). Once it became clear that it was a cut feature, the central part and the north-east quadrant were fully excavated, with large parts of the fill being bulk sampled. The north-west quadrant and the southern end of the feature (where it extended outside the trench) were not excavated.

The feature is irregular in shape, extending some 9 m north–south and 4.5 m at its widest point (Fig. 4). The sides were steep but the angle varied considerably around its edge. The depth also varied: it was very shallow, its maximum depth did not exceed 450 mm, and it was generally only 250 mm deep. The bottom was also irregular with numerous undulations.

In the northeast quadrant, the pit edge fell initially to a shelf, and then dropped again into the bottom of the feature. At this point there were 10 small circular shallow features cut into the bottom and arranged in a semi-circle, some 2 m in diameter (Fig. 4). The cuts were located at the edge of the slope (*see* sections: Fig. 7), and it is possible that they may have been post-holes supporting some sort of circular structure within the feature. The fill of the holes was very similar in nature to the lower fill of the feature, and produced only a few small flint flakes, a chip and numerous fire-fractured flints.

Although the fill of the feature varied, it generally comprised three distinct layers. Firstly a primary fill of yellow-brown sandy clay with rare

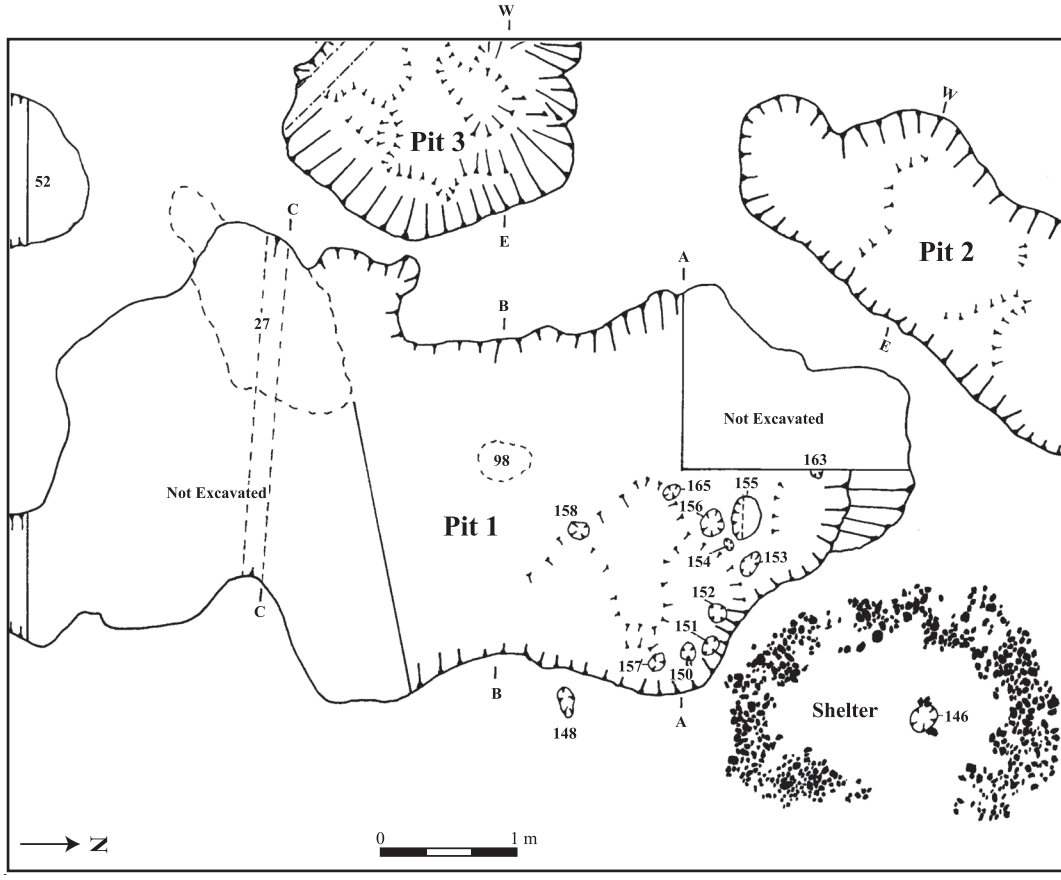

Fig. 4. Plan of the trench showing the other pits and structure (key as Fig. 6).

fire-fractured flints, which had a maximum depth of 20 mm but, being absent in places, did not occur uniformly across the bottom of the pit. Above this was a secondary layer of mid grey-brown sandy clay, with occasional yellow-brown clay streaks (gleying?), containing frequent fire-fractured flints and occasional natural flint pieces, with rare charcoal flecks. Occasionally there were patches of darker grey sandy clay containing more frequent fire-fractured flints and rare charcoal pieces. Finally, the upper layer was a dark grey sandy clay containing large quantities of fire-fractured flints and occasional charcoal pieces and flecks, with rare yellow-brown clay patches that had fewer fire-fractured flints within them. Within this layer there were also occasional patches of darker soil containing very large numbers of small fire-fractured flint pieces and small pieces/flecks of charcoal.

As well as the huge quantities of fire-fractured flint recovered from this feature, 552 pieces of worked flint were also recovered. From the secondary layer numerous flakes, blades and bladelets together with fragments, chips and shattered pieces were found, as well as two bladelet cores and a single flake core. Four microliths also came from this layer, comprising three obliquely blunted bladelets and an isosceles triangle. From the upper fill a similar range of flakes, blades, bladelets, cores and other debitage was recovered. The seven microliths from the upper fill comprised four obliquely blunted bladelets, an obliquely truncated bladelet and two scalene triangles. Core-rejuvenation pieces, a crested blade and two microburins also came from this layer.

In the southwest part of the feature, there was a dump of natural flint nodules mixed with a mid-brown sandy clay and fire-fractured flint

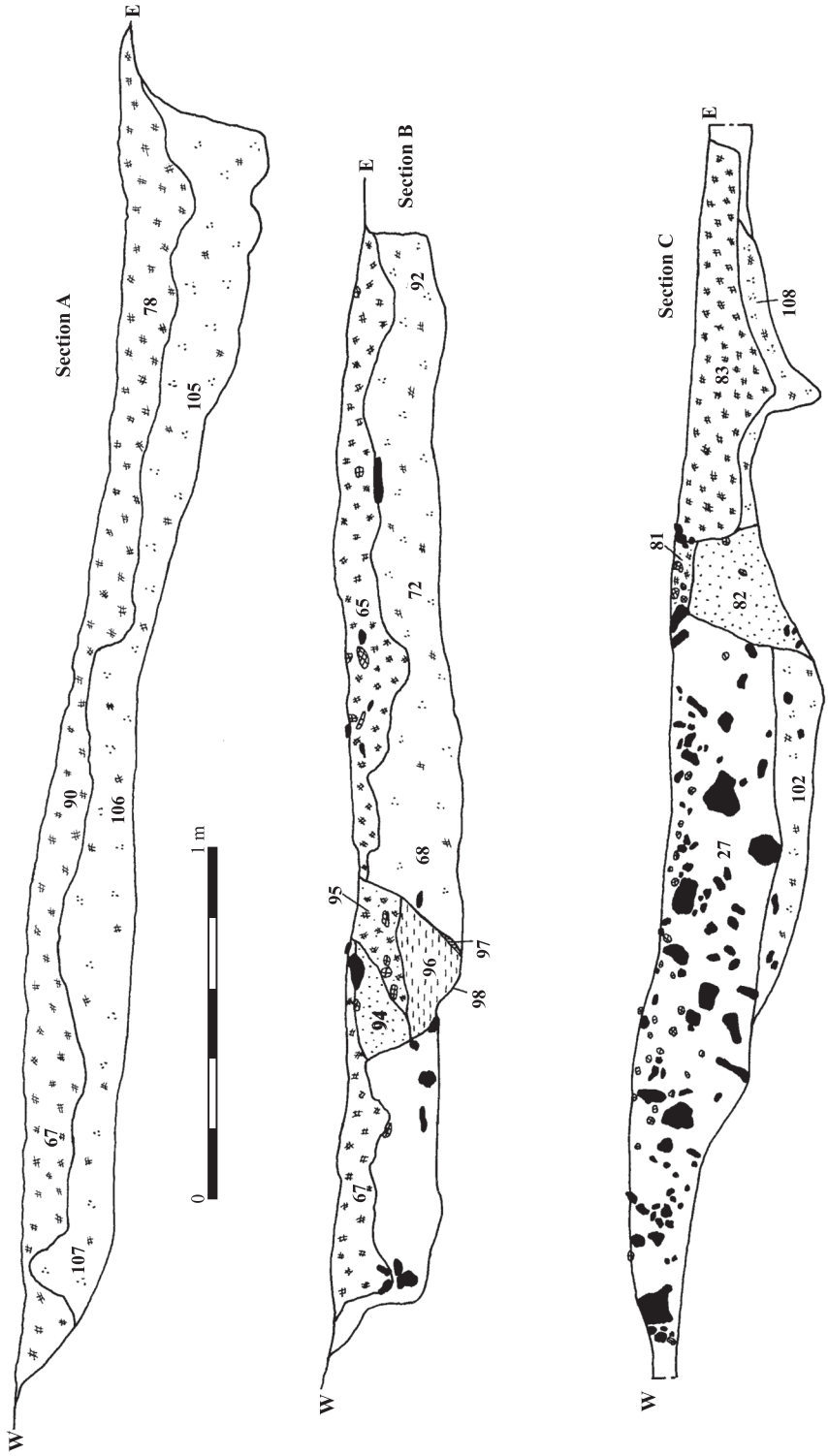

Fig. 5. Pit 1 sections (key as Fig. 6).

pieces (Context 27). This appeared to have been dumped into the partially filled feature as it covered the secondary fill, and also extended outside the feature on its west side. This deposit also contained a small number of flakes and fragments, together with a single tanged point.

The function of this large feature is unclear. The group of possible post-holes in the northeast quadrant may suggest that part of it was used for a shelter. There was no evidence of a hearth within the excavated part of this feature. Initially, it seems to have partly silted up, with discarded flintwork and occasional dumps of fire-fractured flints thrown into it. However, the upper fill comprised huge quantities of fire-fractured flints that were dumped into it (the total quantity of fire-fractured flint in this feature is estimated at 500 kg), along with debitage from flint-knapping and discarded tools such as the microliths. The flint debitage mostly appears fresh and un-abraded, and little of it is fire-fractured, so this suggests it was discarded directly into the feature and had not accumulated on the ground surface beforehand. It has been suggested that this feature might have been a large tree hollow, which is a possibility that cannot fully be discounted. However, even if this had created a natural 'reservoir' into which the artefacts had accumulated, this would not account for the huge quantity of fire-fractured flint that had been deposited into it, and what appeared to be specific dumps of burnt flint, perhaps from containers, within the feature.

The single C14 date from charcoal recovered from the upper fill of this feature, associated with the fire-fractured flints and worked flints, was 7420±40 BP. This appears to be consistent with the accepted dating of the microliths recovered from the fill of this feature. The only exception, however, is the tanged point: as this was recovered from what appeared to be re-deposited material dumped into the feature, it is likely to have come from an earlier phase of activity at the site.

PIT 2 (CONTEXT 127)

Pit 2 was located in the northwest corner of the trench, extending outside the trench on the north side (Fig. 4). It measured in excess of 4 m along its longest axis, was 2 m wide, and had been cut by a field drain at its south end. The pit had steeply sloping straight sides down to a flattish bottom, whilst its rounded south end was shallower. Its maximum depth was 800 mm, although most of the pit had a depth of less than 500 mm (Fig. 6). There was no evidence of any features within the pit, although at its south end there was a deposit of small chalk pieces.

The pit was initially filled with a number of deposits of yellow-brown sandy clay, which appeared to have been washed or dumped in around its sides. These deposits contained some fire-fractured flints, small natural flint pieces, and occasional darker patches containing quantities of small fire-fractured flints. Above this and filling the pit up was a deposit of dark grey to black sandy clay with frequent fire-fractured flints, small natural flint pieces, occasional ironstone pieces and rare charcoal fragments. Occasional patches of very small, fragmented, white fire-fractured flint pieces were found within this layer, and there were also occasional patches or streaks of yellow-brown clay (gleying?). Cut into the top of Pit 2 was the later Pit 4 (*see* below).

The density of fire-fractured flint in Pit 2 was not as great as that in Pit 1. A total of 300 pieces of worked flint was recovered from this pit, again mostly being very fresh and un-abraded. The debitage included bladelet and flake cores, a core-rejuvenation flake and a crested blade, together with numerous flakes, blades and bladelets. A single partially backed bladelet was found in the fill of this pit, which together with the broken bladelets and two microburins suggests that microliths were being manufactured nearby. Other implements included a burin, and a single tranchet axe-sharpening flake.

The function of this pit is uncertain. The greater depth and the presence of some natural flint nodules in its bottom suggest that it may have been dug to obtain flint from the Head deposit. It then appears to have been left open for a while with small deposits of soil mixed with a few fire-fractured flints and pieces of worked flint dumped into it. Finally, it was then probably used as a rubbish pit for depositing the waste from nearby flint-knapping and cooking. The limited dating evidence provided by the flintwork would suggest that this pit is of a similar date to Pit 1.

PIT 3 (CONTEXT 60)

Pit 3 was located on the west side of the trench, and extended further outside (Fig. 4). Its maximum dimensions inside the trench were 2.85 m by 1.96 m, and it was 480 mm deep. Its sides sloped at *c*. 45° to half its depth, and then became steeper

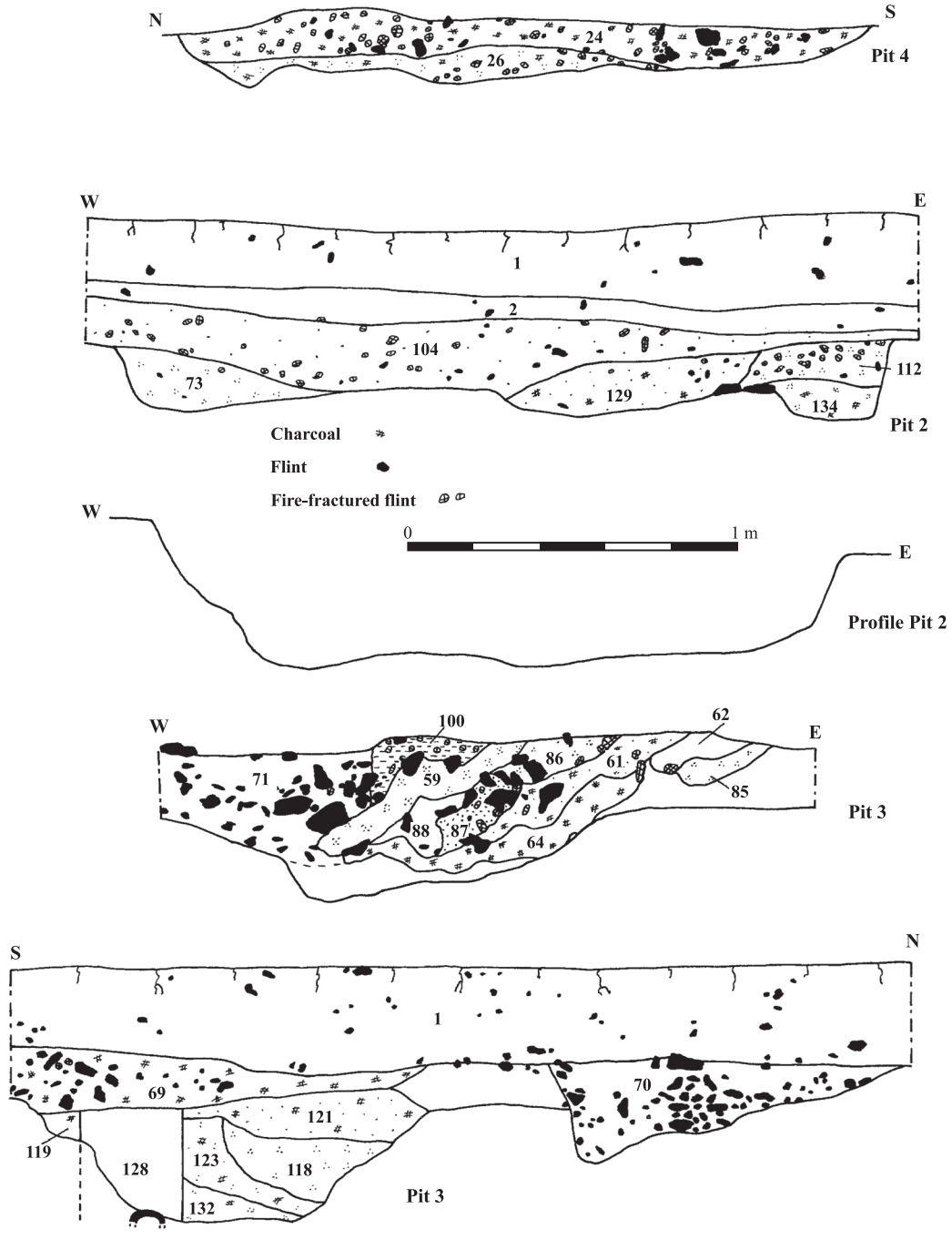

Fig. 6. Pits 2, 3 and 4 sections.

before rounding into a flattish bottom. There were no internal features. The fill of this pit was quite complex, and in the section (Fig. 6) a series of 'tip' deposits can be seen. However, these were not uniform across the whole of the pit fill and other layers, again probable single tip deposits, were identified in other parts of the pit. A modern land drain had cut through the south side of the pit.

Context 64 was the initial tip deposit, comprising a grey-black sandy clay with frequent small to medium fire-fractured flints, and rare pieces of charcoal. Above this was Context 61: an orange-brown sandy clay with frequent small- to medium-sized fire-fractured flints and occasional natural flint nodules. Context 87, another tip deposit, was a mid-grey sandy clay containing frequent fire-fractured flints and also occasional darker patches with larger concentrations of smaller fire-fractured flints. Context 88 was a small patch of orange-brown sandy clay with rare natural flints, whilst Context 86 was an orange-brown sandy clay with rare fire-fractured flints and frequent small- to medium-sized natural flint pieces. Context 59 was the final tip-fill shown in the section, and was a grey-black sandy clay with frequent fire-fractured flints, charcoal and ash-like material. Elsewhere in the pit were other tip deposits, of which Context 115 (not shown in section) comprised a black to dark brown sandy clay with a dense concentration of fire-fractured flints, rare burnt sandstone pieces and charcoal. Overlying most of the pit was a layer of yellow-brown sandy clay with frequent fire-fractured flints and some small- to medium-sized natural flint pieces (Context 69). However, at the west end of the pit, a deposit of natural flint nodules of varying sizes mixed with orange-brown sandy clay with rare pieces of ironstone and worked flint (Context 71) had been dumped into the pit after the final tip-fill (Context 59) had been deposited. There was little, if any, fire-fractured flint in this last context. On the east edge of the pit were two further deposits in a shallow extension to the pit: Context 85, a dark orange-brown sandy clay with rare fire-fractured flints and Context 62, a dark grey sandy clay with frequent fire-fractured flints.

Pit 3 produced 262 pieces of worked flint, including flake and bladelet cores, core fragments and a rejuvenation flake. Other debitage included flakes, blades and bladelets, together with fragments, chips and shattered pieces. The microliths comprised a single isosceles triangle, two obliquely blunted bladelets and a single straight-backed bladelet. The latter three microliths all came from Context 64; both of the obliquely blunted bladelets had impact damage, whilst the straight-backed bladelet is a late Mesolithic piece (Jacobi, pers. comm.). A single burin also came from this pit.

Charcoal from Context 115 provided a C14 date of 7500±40 BP.

The function of this pit was probably to extract flint nodules from the Head deposit, which was exposed in the northwest part of Pit 3 and extended northwards towards Pit 2. It was then used as a refuse pit for waste from knapping episodes, repaired hunting equipment and cooking refuse. It is possible that the almost sterile layers between each of the 'tip' deposits might represent a period of time when the site was not in use, and could therefore suggest that this site was either being used seasonally or being revisited occasionally. It has also been suggested that this pit is a tree hollow, but its depth, shape and the nature of the 'tip' deposits of fire-fractured flints would appear to discount this.

PIT 4 (CONTEXT 6)

This shallow oval pit was cut into the top of Pit 2, and therefore probably represents re-use of the site after a period of abandonment, which could have been many years. The pit was 2.37 m long and 1.5 m wide, and 200 mm deep (Fig. 3). It had shallow sloping sides with an irregular bottom (Fig. 6). It comprised two fills: first, a primary fill (Context 26) of yellow-brown sandy clay containing fire-fractured flints and occasional ironstone pieces, with dark grey-black patches containing frequent fire-fractured flint pieces and charcoal fragments. This layer occurred more in the southern part of the pit. Above this was Context 24, a dark brown sandy clay with frequent fire-fractured flints, occasional natural flints, ironstone pieces and charcoal fragments.

Cut through Context 26, and sealed by Context 24, was a shallow oval cut (Context 49) 420 mm long by 300 mm wide and 100 mm deep, containing a dark grey to black sandy clay with frequent fire-fractured flints, ash and charcoal flecks. There were some natural flint pieces in the bottom edge of the cut. Three flakes (one of which was retouched) and a flint fragment were found in

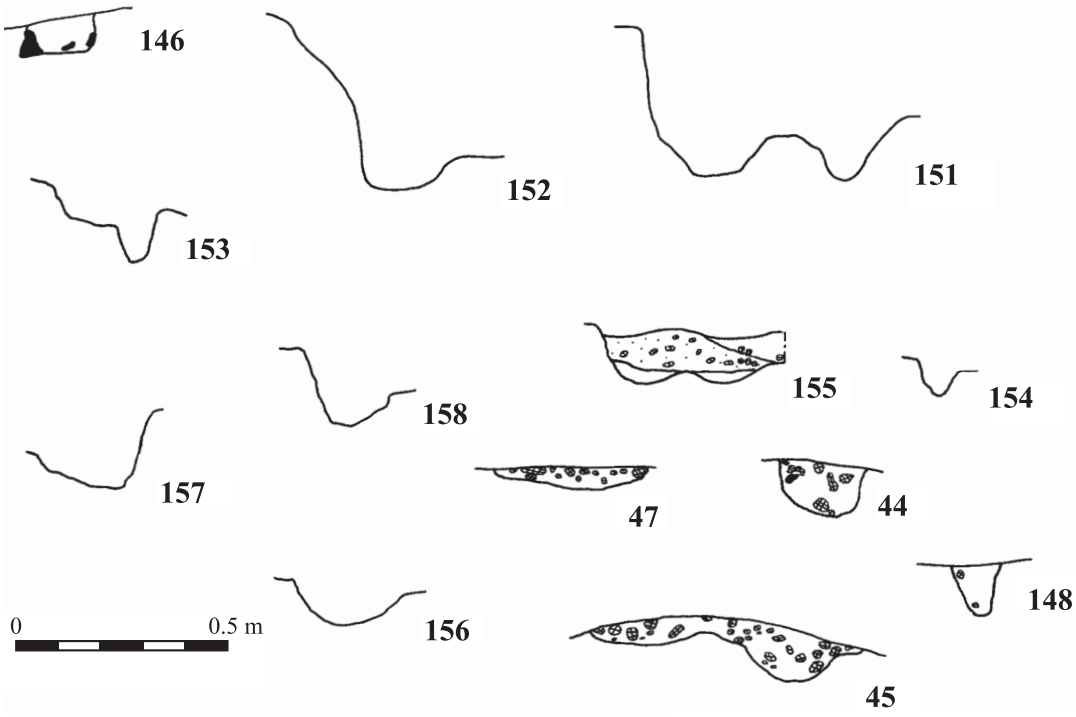

Fig. 7. Smaller feature sections. (Key as Fig. 6.)

this cut. A further shallow oval cut (Context 47) was found in the bottom of Pit 4 at its north end. This contained a similar fill to that in Cut 49, and produced 10 pieces of worked flint, including a tanged point. The fills of these two features are likely to represent material re-deposited from elsewhere on the site.

Pit 4 contained 221 pieces of worked flint, mostly flakes, fragments, chips and shattered pieces, with smaller quantities of bladelets and bladelet fragments. A single burnt fragment from a microlith, and a tranchet axe-sharpening flake were the only evidence of implements. The earlier Mesolithic tanged point in Context 47 appears to be residual, and may have been re-deposited from the adjacent working area (Context 77), where other tanged points were found. Although the stratigraphic evidence would suggest that this pit is later than Pit 2, there is no reason why it should not be of a similar date.

OTHER CUT FEATURES

Three small cut features were discovered between Pits 3 and 4. The first (Cut 44) was oval with steep sides and a dished bottom; it measured 450 by 280 mm and had a depth of 120 mm (Fig. 7). It was located in the northwest corner of the trench adjacent to Pit 4, and partly above Pit 2 (Fig. 3). The feature was filled with a dark grey to black sandy clay with numerous fire-fractured flints. The only finds were a flint flake and chip. There was no evidence of burning of the soil in the bottom or sides of the feature, although there were numerous small flecks of charcoal throughout the fill.

The second feature (Cut 45) was a roughly oval shallow cut, 750 mm by 500 mm, and 110 mm deep (Fig. 7). It was located above the southwest part of Pit 2 (Fig. 3). It has sloping sides into a dished bottom, with a thin layer of possible overspill on the north and west sides. Its fill comprised a dark grey to black sandy clay with numerous fire-fractured flints, small charcoal pieces and ashy flecks, whilst the overspill of fire-fractured flints was mixed with patches of yellow-brown clay (gleying?). There was no evidence of burning of the soil in the bottom or sides of the feature. One flint fragment came from the main fill, whilst four flakes, a fragment and a chip were found in the area of overspill.

The third was a small oval feature (Cut 17) measuring 450 mm × 200 mm, and 150 mm deep,

and was also above Pit 2 (Fig. 3). It had steep sides with a rounded bottom. The feature contained a dark-brown sandy clay fill with numerous fire-fractured flints and occasional small flecks of charcoal. The finds recovered from it were two flakes and two fragments, one of which was fire-fractured. There was no evidence of burning of the soil in the bottom or sides of the feature.

These three small features, which are certainly later than Pit 2, may be the truncated bottoms of small pits or, more likely, later tree root hollows or disturbance.

THE SHELTER

In the northeast corner of the site a spread of irregularly shaped natural flint nodules of variable sizes was mixed with a yellow-brown sandy clay (Context 46), covering an area of approximately 2 m^2 (Fig. 3). This layer merged into a similar layer of yellow-brown sandy clay on its west side (Contexts 39/40) that also extended above Pit 2, and contained far fewer natural flint nodules. It was noted that there were very few fire-fractured flints in this northeast part of the trench. Context 46 contained 59 pieces of worked flint, including three cores, flakes, blades and bladelets. Context 39/40 produced 46 pieces of worked flint, including bladelets and a microburin.

Below Context 46 was an oval area whose outer edge was defined by irregularly shaped natural flint nodules of variable sizes compacted into the yellow-brown clay. The oval area was some 3 m in diameter (Fig. 4). The flint nodules appeared to form the edge of a possible structure, within which were a few scattered natural flint nodules sitting on a compact area of yellow-brown clay. The area contained within the oval of flint nodules was very slightly dished, and the soil more compact than the area outside it. On the east side of the oval there was a gap approximately 1 m wide in the natural flints forming a possible entrance; the ground surface here appeared slightly worn.

In the centre of the flint structure was a single post-hole (Cut 146) 150 mm by 200 mm in diameter and 70 mm deep (Fig 7). The edge of the post-hole was packed with a number of small natural flint pieces. From the fill of the post-hole two small flint chips and a number of very small fire-fractured flints were recovered.

The form of this structure suggests the pitching place of a simple tent or tepee made of wood and hide, where the natural flint nodules were used to hold the bottom of the hide covering in place. At the same time the flint nodules may also have provided a dry base for the hide, keeping it off the ground so that it did not get damp and rot. When the camp was abandoned, the hide covering was lifted, leaving most of the flint nodules in place and scattering others around the structure. It is possible that the post-hole held a central post for the shelter, which was also taken down when the shelter was dismantled.

There were no worked flints, and only a handful of fire-fractured flints, recovered from the area within the structure, suggesting that it had purposely been kept clean. The only flintwork recovered was six pieces of debitage from the oval of natural nodules that formed the edge of the structure.

WORKING SURFACES

The surfaces around the pits and structure produced a quantity of worked flints. This was mostly debitage: cores, flakes, blades and bladelets, together with numerous fragments, shattered pieces and chips. Some core-rejuvenation pieces and occasional implements were also found. Although this gives the impression that flint-knapping was taking place around the site, none of the pieces could be refitted, so it is not possible to be certain whether there were discrete knapping or discard areas. However, four areas where debitage was concentrated were noted. The two smallest were in the southeast and southwest corners of the trench, whilst the third was located between the structure and Pit 4 (Fig. 3). The fourth and most concentrated area of flintwork was in the north-west corner of the trench (Context 77). The soil here was a yellow-brown sandy clay some 100 mm deep, with occasional natural flint pieces but very few fire-fractured flints. Pit 4 had cut it on its east side, but its relationship with Pit 2 is unclear.

The 152 pieces of worked flint from Context 77 included both hard and soft hammer-struck flakes, soft hammer-struck blades and bladelets, flake and bladelet cores, core-rejuvenation flakes, fragments, shattered pieces and chips. There were three retouched pieces and seven microliths. The presence of many bladelets, which included numerous snapped fragments, and a single microburin, suggest that the production of microliths was taking place here, perhaps in conjunction with the repair of hunting equipment.

The microliths include three obliquely blunted bladelets, two of them small fragments and the third also broken, two scalene triangles and two tanged points. Although the scalene triangles would typically be later Mesolithic in date, the two tanged points have similarities with points from the Ahrensburgian culture (Jacobi pers. comm.) and are normally dated to the earlier Mesolithic period. The obliquely blunted bladelets could span both periods, and as all three examples are broken, it is difficult to be certain whether they are manufactured on broad or narrow bladelets. The occurrence here in the same context of both earlier and later Mesolithic types of microlith is perplexing. It is possible that this context may be earlier than Pit 2, and therefore represent a knapping surface from an earlier phase of activity at the site, but that later (intrusive?) pieces became incorporated into the same area when it was being utilized for knapping during the later phases of occupation at the site. The other possibility is that the area was being used over a long period of time and that the material from different phases became mixed.

THE FINDS

Further analysis of the flintwork assemblage, together with details of the plant remains and pollen can be found on ADS.

THE EXCAVATED FLINTWORK

The excavated flintwork assemblage comprises 3226 pieces of worked flint, including debitage, cores and implements (Table 1). These, together with a few specific items from the fieldwalking, are considered in more detail below. The flint raw material comprises six different types (*see* ADS).

The debitage and cores

The 3066 pieces of debitage are made up of both hard and soft hammer-struck flakes and blades, and soft hammer-struck bladelets, together with significant numbers of fragments, chips and shattered pieces. A sample of flakes, blades and bladelets was analysed, and the results of this can be found on ADS. Other more specialized debitage such as axe-/adze-thinning and -sharpening flakes, microburins and core-rejuvenation pieces are also present (Table 1). In addition, 78 cores of various types and 12 core fragments were also found.

Flakes

The 1245 flakes (Table 1) comprise both hard (35%) and soft (65%) hammer-struck pieces, of which 32 had been retouched (2.5%), and *c.* 1% were fire-fractured. The hard hammer-struck flakes tend to be larger and are more likely to have cortex on them, confirming that primary flakes were more likely to be removed with a hard hammer during the initial working of a core. The soft hammer-struck flakes are more likely to exhibit evidence of platform abrasion resulting from the preparation of the platform edge. The soft hammer-struck flakes tend to have a more regular pattern of parallel dorsal flake scars, whilst on the hard hammer-struck flakes they are more irregular and multi-directional.

Blades and bladelets

The 365 blades and bladelets make up just under 23% of the flakes, blades and bladelets from the excavation (Table 1). Only true blades and bladelets have been included in this category: i.e. their length is greater than twice the width, and the piece has parallel sides and dorsal ridges, with bladelets being less than 12 mm wide. The majority have no cortex present on the dorsal side, whilst the proximal ends are almost always characterized by platform abrasion. The unidirectional dorsal scars on most of the pieces confirm the apparent preference for single platform cores.

Over 43% (140) of the bladelets are broken fragments, comprising proximal, mesial and distal fragments in roughly equal proportions. Some of these pieces may be unintentional breakages during manufacture or due to subsequent trampling, but a small number appear to be the result of intentional breaks, perhaps during the manufacture of microliths (*see* below). Amongst the bladelets are small numbers of plunging bladelets, together with hinge and step fractures, demonstrating that although considerable care was being exercised throughout the flaking process, errors and mis-hits were still possible.

Fragments, chips and shattered pieces

Apart from the bladelet fragments mentioned above, there were a further 660 flake and blade fragments found during the excavation, which make up 21.5% of the debitage, together with 436 chips (making up 14% of the debitage) and 298 shattered pieces (9.7%). Although a proportion of the fragments and shattered pieces from the topsoil and upper layers are the result of plough damage, the majority have contemporary breaks, and are therefore likely to have resulted from manufacture and subsequent trampling in antiquity. Twenty-four of the fragments have been retouched. The 436 chips are small flakes of less than 10mm in size, and are frequently less than 5mm. Significant numbers of these chips were recovered during the on-site dry-sieving and subsequent bulk wet-sieving of samples. The chips are waste pieces that resulted from knapping, core platform abrasion, or the retouching of implements, and their presence in such numbers on this site is a sure indication that one or more of these activities was being carried out.

Cores

A total of 78 cores and 12 core fragments was recovered during the excavation (Table 1). The cores have been classified as 59 flake cores, 3 blade cores and 16 bladelet cores, although a number of them have evidence of both flake and blade/bladelet removals, sometimes from different platforms. The cores are predominantly Type 1 (local Head Deposit flint — *see* ADS), with smaller numbers of Types 2, 3 and 4. Only a single example of Type 5, and no examples of Type 6, were found.

The flake cores comprise 33 single-platform cores and 26 multi-platform cores. The single-platform cores are

predominantly irregular, with a small number being pyramidal (Fig. 8, nos 1–2). Most still have some cortex present, and have not been flaked around the whole of the platform circumference. In addition to the use of small nodules, a number of cores were manufactured on flake fragments or thermal pieces.

On most, fewer than 10 removals were taken from the single platform, after which the core was discarded. Most platforms are on original patinated, flat, outer non-cortical surfaces of the nodule. Although most platforms have some evidence of preparation, less care was taken over the last few removals, leaving incipient cones and overhangs on the platform. Two of the single platform flake cores also have bladelet removals from the same platform (e.g. Fig. 8, no. 6).

The multi-platform flake cores are also predominantly irregular (Fig. 8, no. 3), with the remainder having two opposed platforms (Fig. 8, no. 4) or two at 90° to one another. Although most have two identifiable platforms, some may have had additional earlier platforms for which minimal evidence survives in the form of remnant negative flake scars. The multi-platform flake cores rarely have any cortex remaining, and many were fully worked out (e.g. Fig. 8, no. 5). The platforms tend to be on manufactured surfaces, and were normally better prepared than those on the single-platform cores.

Thirteen of the 16 bladelet cores have a single platform (e.g. Fig. 8, no. 7), whilst the remaining three have two opposing platforms. The cores comprise prismatic, pyramidal and irregular types, and are mostly well worked out. Many have a remnant of cortex, but on most this is quite minimal, with some having no remaining cortex. Platforms tend to be carefully prepared, although the overhangs and incipient cones from the final removals were generally left. Three of the bladelet cores were produced on irregular fragments (e.g. Fig. 8, no. 8). The abandonment of many of the bladelet cores was due to the core having been fully worked out; however, in at least two cases, the final removal was a failed plunging or hinged flake (e.g. Fig. 8, nos 9–10).

A single large core, of flint Type 2, recovered during the fieldwalking has two opposing platforms with both blade and bladelet removals (Fig. 9, no. 11). One core has abrasion consistent with its re-use as a hammerstone, and one core and a core fragment were fire-fractured.

Core-rejuvenation pieces

As well as the obvious evidence of platform preparation on the cores themselves, there are numerous pieces of debitage demonstrating that cores were being carefully worked, curated and rejuvenated. A total of 24 core-rejuvenation flakes were recovered. These include flakes that had partly or completely removed an existing platform, or which had removed an obstruction or previous mis-hit on a core, to enable flaking to be continued. A number of the core-rejuvenation flakes are *flancs de nucléus* (e.g. Fig. 9, no. 12). These are flakes that remove all or part of the core's flaking surface (Barton 1992), and may either be a deliberate rejuvenation of the core or accidental.

Four-core tablets are flakes that have removed the entire platform from the core, as a result of a blow delivered to the side of the core just below the platform (e.g. Fig. 9, nos 13–14). This will have created a new platform on the core from which flaking could then be restarted. Only three crested blades were recovered during the excavations, suggesting that cresting was not used frequently at the site, perhaps owing to the shape and size of the raw material used.

The proportion of flakes to flake cores is 21:1 and bladelets to bladelet cores is just in excess of 20:1. This appears to be a low number when compared, for example, to Hengistbury Head where the ratio was 64:1 (Barton 1992). The number of rejuvenation pieces, especially core tablets, is also on the low side, but there are more single-platform cores than multi-platform cores at the site, and therefore there may not have been a great requirement to rejuvenate cores, perhaps due either to the plentiful supply of flint or to the good size of the raw material.

Table 1. The excavated flintwork.

Hard hammer-struck flakes	424
Retouched hard hammer-struck flakes	14
Soft hammer-struck flakes	789
Retouched soft hammer-struck flakes	18
Hard hammer-struck blades	4
Soft hammer-struck blades	36
Retouched soft hammer-struck blade	1
Soft hammer-struck bladelets	181
Retouched soft hammer-struck bladelets	3
Bladelet fragments	140
Fragments	636
Retouched fragments	24
Chips	436
Shattered pieces	298
Axe-thinning flakes	6
Tranchet axe-sharpening flakes	4
Microburins	10
Burin spalls	12
Core-rejuvenation flakes	24
Crested blades	3
Core tablets	4
Single-platform flake cores	33
Multi-platform flake cores	26
Single-platform blade cores	3
Single-platform bladelet cores	13
Two-platform bladelet cores	3
Core fragments	12
End-scrapers	9
Side-scrapers	3
Hollow scrapers	3
End and side scraper	1
Miscellaneous retouched pieces	7
Piercers	4
Notched flakes	2
Burins	3
Tanged points	4
Microliths	26
Truncated blade	1
Retouched natural flake	1
Small adze/axe fragment	1
Core re-used as hammerstone	1
Hammerstones	3
Total	**3226**

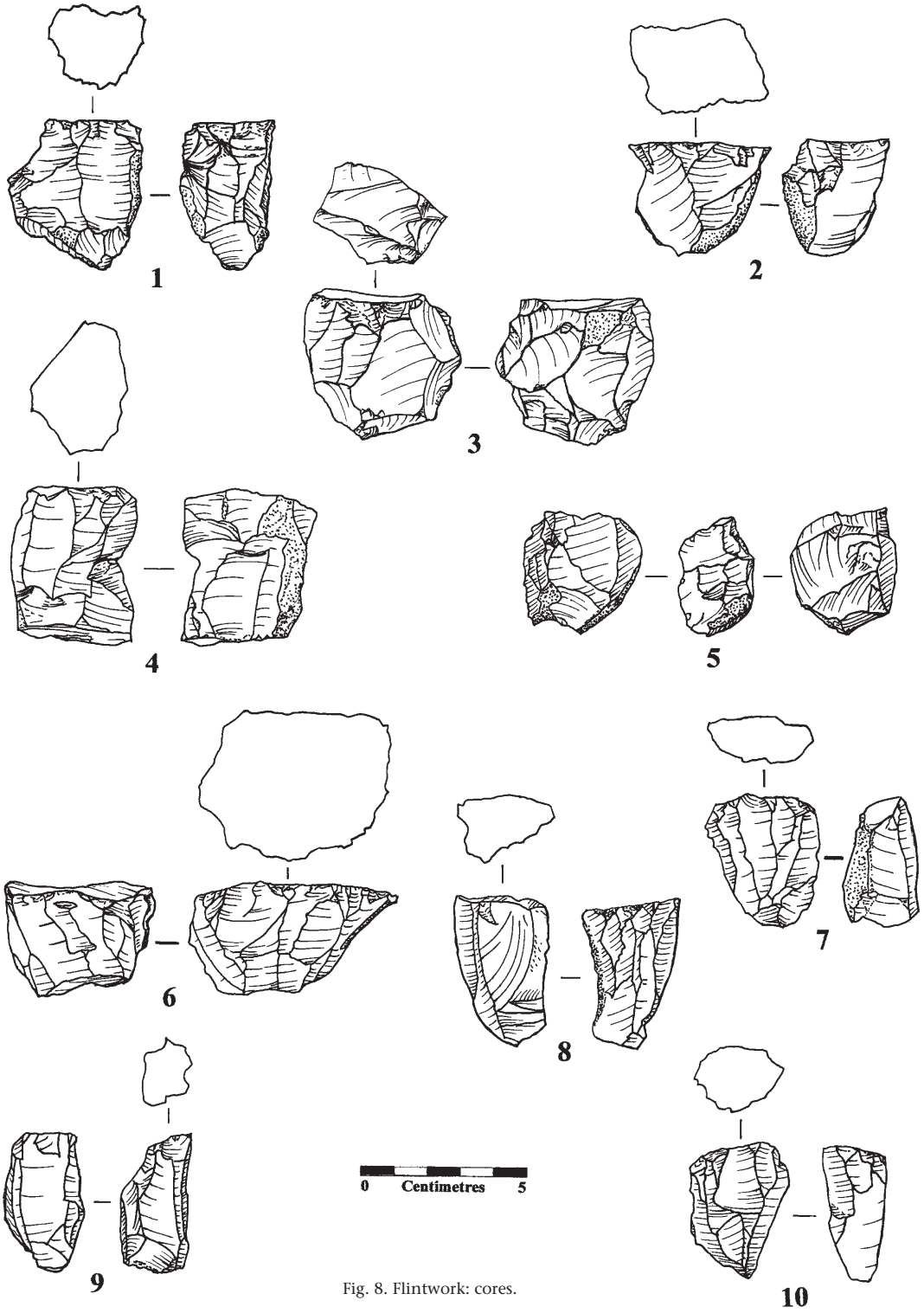

Fig. 8. Flintwork: cores.

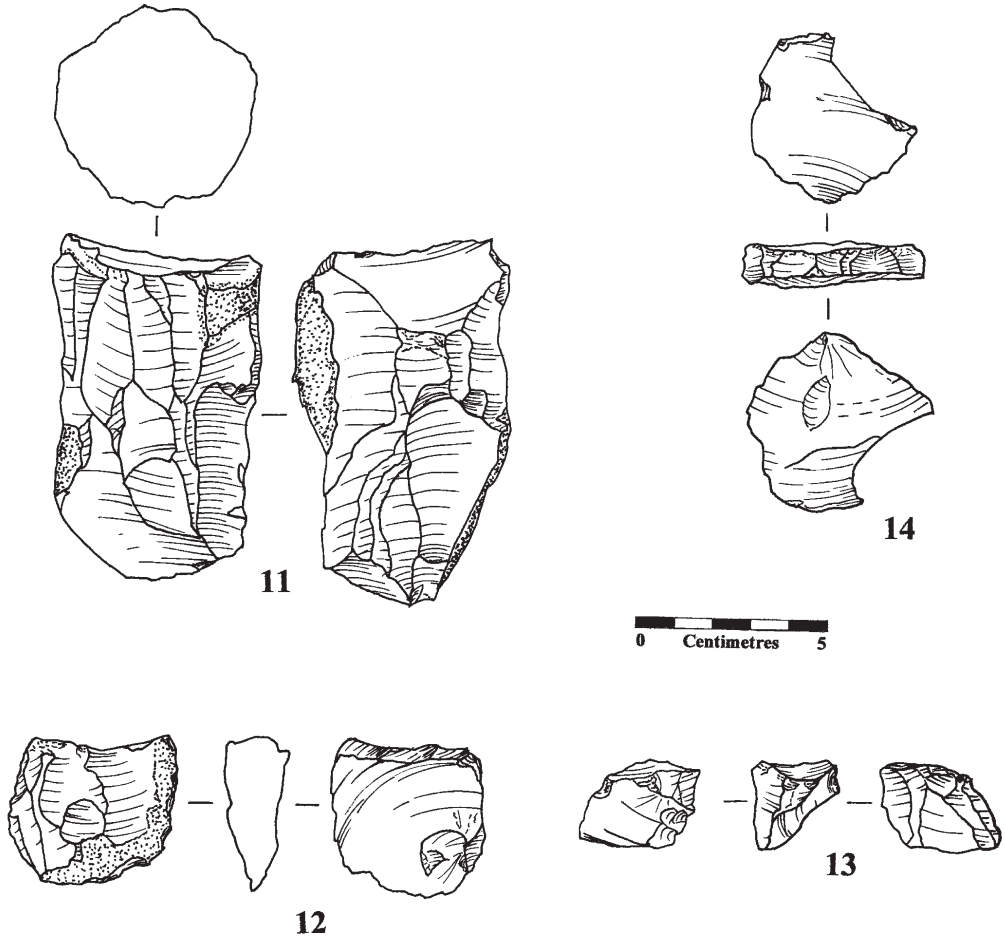

Fig. 9. Flintwork: cores and associated pieces.

Implements

Of the 69 implements recovered during the excavation, 30 (43%) were microliths (Table 1). The implements represent 2% of the worked flint from the site, comparable with other sites such as Hengistbury Head where they represented 1.7% (Barton 1992). The different implement types are considered below and on ADS, together with the associated debitage.

Table 4. Microliths.

Type			No.
Clark	**Jacobi**		
Type A	1	Obliquely blunted	12
Type B	5b	Straight backed	1
	1ac	Partially backed	2
Type C	3b	Obliquely truncated	1
Type D	2	Isosceles triangle	3
	7	Scalene triangle	5
Type G		Tanged points	4
Unidentified fragments			2
Total			**30**

Microliths

The microliths are the largest group of implements found at the site and comprise 28 examples which were complete, or sufficiently complete to be classified, and two fragments (Table 4 & Fig. 10). They have been classified by reference to Clark (1934a) and Jacobi (1978), and a more detailed analysis of the microliths can be found on ADS.

The microliths that were found at Streat Lane make up an interesting small assemblage that comprises pieces that could normally be assigned to either the Early Mesolithic (e.g. tanged points) or Later Mesolithic (e.g. scalene triangles) periods. The earlier types appear to be concentrated in the northwest part of the site, or came from contexts which are probably redeposited material, whereas the later types came from the pits which all appear to date from the later Mesolithic period. The large number of obliquely blunted bladelets, together with these other types, may suggest a transitional assemblage, and this is discussed further below.

Four of the microliths have evidence of impact damage. This was probably due to the point impacting on bone, or

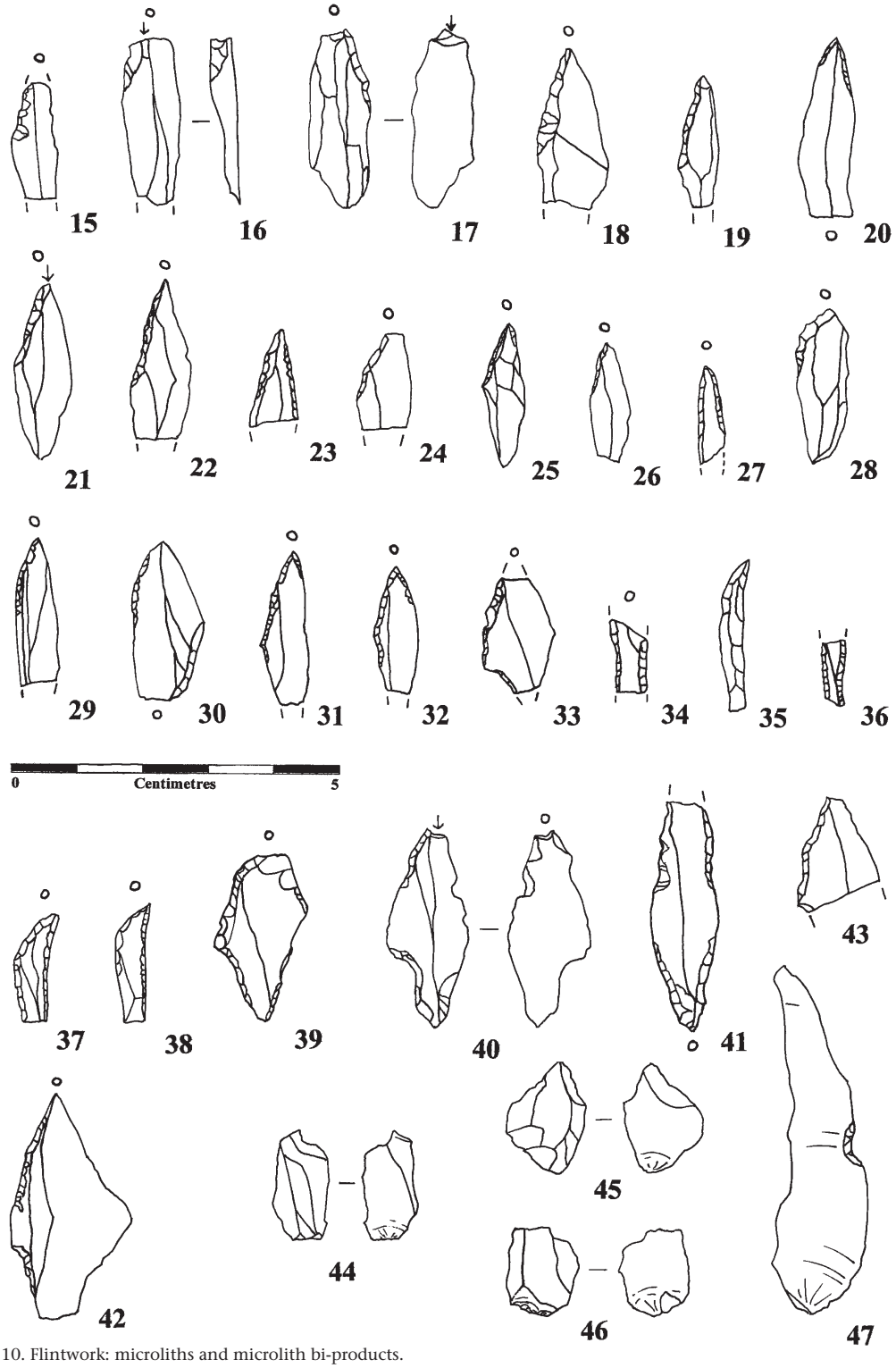

Fig. 10. Flintwork: microliths and microlith bi-products.

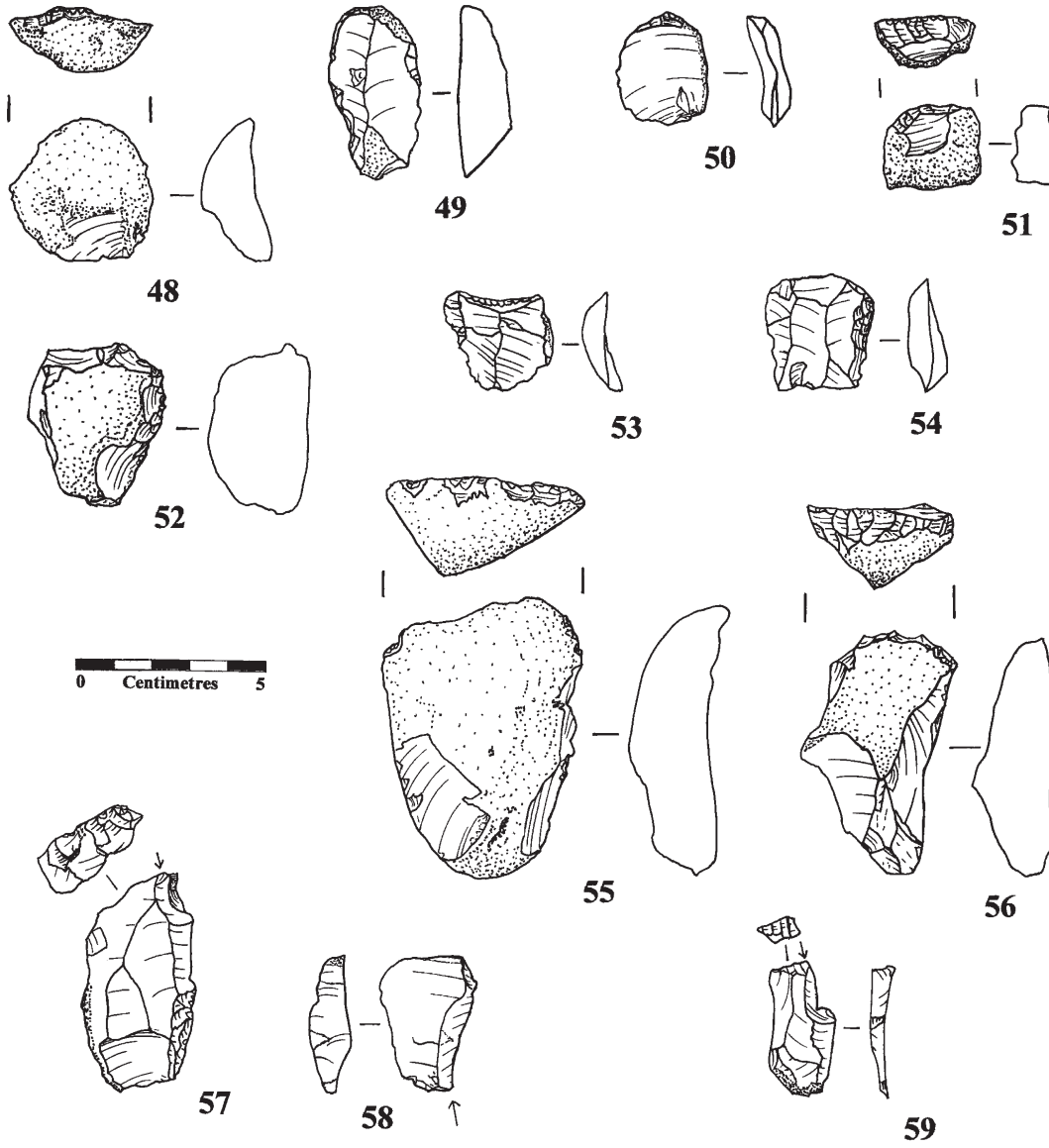

Fig. 11. Flintwork: other implements.

missing the target and hitting the ground (Barton 1992) during hunting expeditions.

Microlith production debitage

As well as the bladelet cores, bladelets, and numerous bladelet fragments, all of which may have resulted from the manufacture and repair of microliths, a number of pieces can be attributed directly to microlith production. Ten proximal microburins were recovered, but no distal microburins were identified. Of those identified, all were right-hand notched (e.g. Fig. 10, nos 44–5), and at least one was the result of a mis-hit (Fig. 10, no. 46). A small number of bladelets have minimal areas of retouch along the right-hand edge, sometimes forming a small notch (e.g. Fig. 10, no. 47), and it is possible that these may have been blanks for microliths, abandoned at an early stage in their manufacture. In addition, at least one of the microliths described above had been abandoned during manufacture.

The evidence both from the microliths and the debitage suggests that microliths were being produced at Streat Lane, although possibly only in small numbers. Furthermore, the discarding of broken and impact-damaged microliths at the site indicates that hunting equipment, such as arrows, was being repaired and maintained.

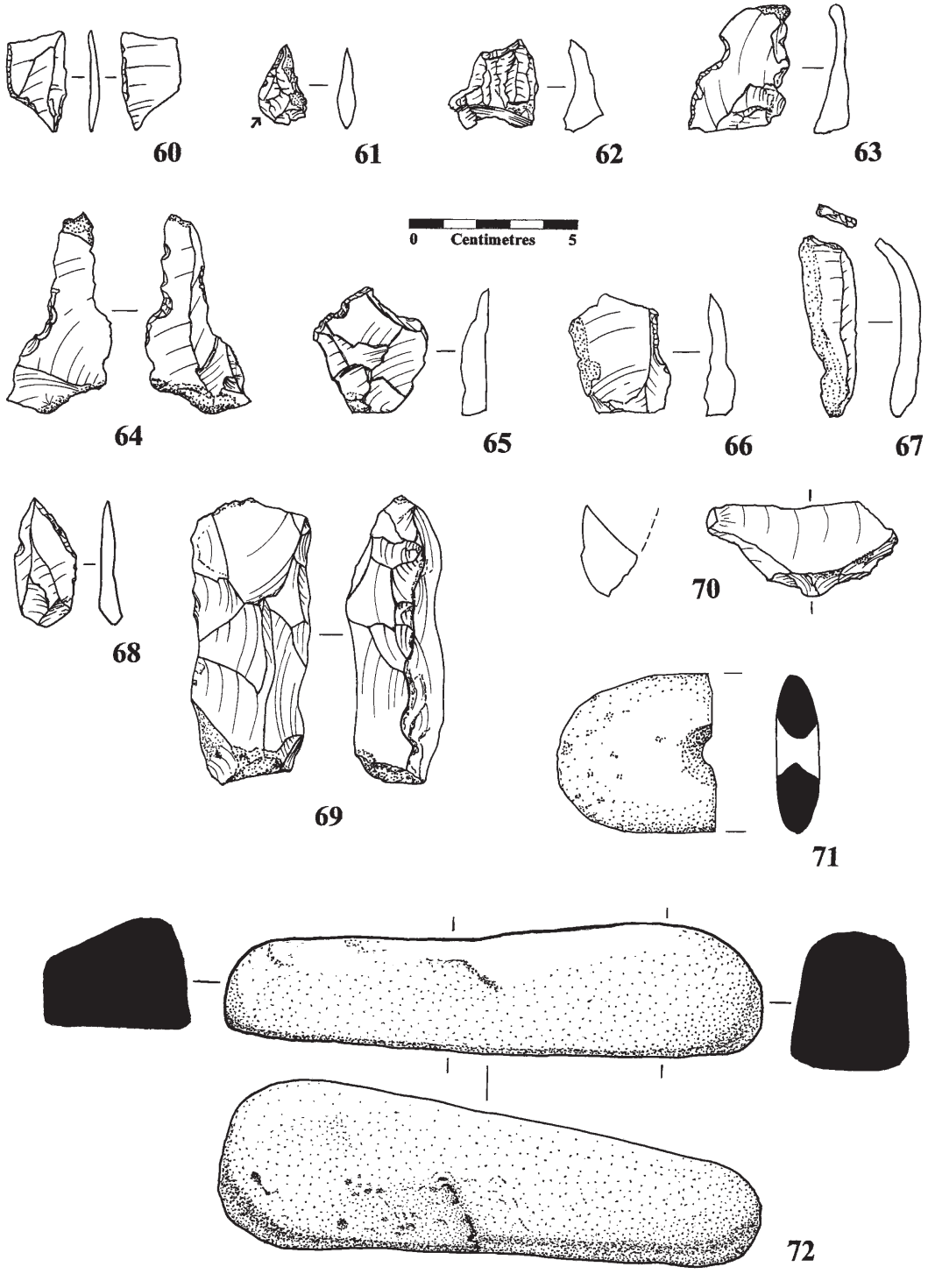

Fig. 12. Flintwork and worked stone: other implements.

Scrapers

The 16 scrapers are predominantly simple end-scrapers (Fig. 11, nos 48–51), with a few side- (Fig. 11, no. 52), hollow- (Fig. 11, no. 53) and combined- side-/end- scrapers (Fig. 11, no. 54), and all were made on flakes. Most were made on small stubby flakes, whilst two of the end-scrapers were manufactured on larger flakes (Fig. 11, nos 55–6). Almost all of the scrapers are on hard hammer-struck flakes, and have cortex remaining on their dorsal sides, showing that there was a tendency to use primary flakes for these tools.

In most cases the convex scraping edge is at the distal end of the flake, and was abruptly retouched. The amount of retouch on some of the end-scrapers is quite minimal, abruptly blunting the convex end, but for a few of the scrapers the retouch extends partially down one or both lateral edges. A few of the scrapers have significant abrasion on the scraping edge, but the majority have very little indication that they had been utilized.

The surprising characteristic of this small group of scrapers is the comparative crudeness of the pieces. None were made on blades, and the selection of shorter stubby cortical flakes seems to have been preferred. The impression is given that these were expedient tools, quickly made for one-off tasks and then discarded, a trend that has been noticed at other Mesolithic sites (Barton 1992).

Burins

Three burins were found during the excavation. The first (Fig. 11, no. 57) is on a convex retouched truncation on a thick hard hammer-struck flake. The second burin is on the retouched butt of a hard hammer-struck hinged flake (Fig. 11, no. 58), whilst the third is on an oblique retouched truncation (Fig. 11, no. 59). A small number of possible burin spalls were also recovered, although none could be refitted to the burins.

Other retouched implements

There are a number of implements that do not fall into the above categories. Most have areas of partial retouch extending along one or more sides, or to create a notch. Many of these have no apparent function, but the retouch is continuous, and is unlikely to be accidental.

Fig. 12, no. 60 is a mesial section from a blade, with abrupt retouch along three sides, and a contemporary break on the fourth side. This piece bears some resemblance to the 'pronged' piece from Hengistbury Head (Barton 1992, fig. 5.22, no. 6). A small soft hammer-struck flake with a natural point at its distal end, it has some partial abrupt retouch on its lateral edge towards the point, and may have been used as a piercer (Fig. 12, no. 61). A fragment of a core-rejuvenation flake, which was abruptly retouched to form a small point, may have been intended as a piercer or small scraper (Fig. 12, no. 62).

A flake was partially retouched along one lateral edge, ending in a retouched notch (Fig. 12, no. 63), whilst a flake fragment with a triangular section has notches retouched into both lateral edges (Fig. 12, no. 64).

Figure 12, no. 65 shows a hard hammer-struck flake abruptly retouched, including a small notch, at its distal end, whilst Figure 12, no. 66, is a broken flake that was partially retouched along one lateral edge. The break postdates the retouch, but appears contemporary.

A blade, whilst retaining cortex along one lateral edge, was obliquely truncated at the distal end (Fig. 12, no. 67), and a soft hammer-struck flake or blade has a distal oblique truncation (Fig. 12, no. 68).

Axes/adzes

A single butt end of a small axe or adze in flint Type 2 (Fig. 12, no. 69) was found in the topsoil. It has a slightly rounded butt end showing the patinated outer surface of the original nodule, and retains a small patch of cortex. It was flaked over its surface to give a rectangular profile. There is abrasion on its edges, providing evidence that it was once hafted. It has been broken just below the hafting abrasion, leaving a large negative scar on one surface, which starts at the break, together with a number of smaller scars. The broken end has some subsequent abrasion, possibly from its re-use.

Amongst the debitage were six axe-/adze-thinning flakes; all have a distinctive thin curving profile and multi-directional negative scars on the dorsal side. These could have come from the flaking of an axe or pick implement. Four tranchet adze-sharpening flakes were also found (e.g. Fig. 12, no. 70).

Flintwork discussion

The majority of the flintwork found at Streat Lane is debitage, and clearly indicates that all stages of the flint-working process were being undertaken at the site. The raw material was either available from the Head deposits at the site, or was being brought to the site from Clay-with-flint outcrops on the South Downs, a short distance to the south of the site. From these sources reasonably good-quality flint was being selected for processing. Primary flakes were being removed with a hard hammer to remove the cortex, and then secondary working was effected with either a hard or soft hammer. This primarily produced flakes, and in some cases the sole purpose may have been to produce flakes for subsequent modification as scrapers, burins and other flake tools. From the few flake tools found at the site it appears that most may have been taken away for use elsewhere, either as completed tools, or as unmodified flakes for subsequent modification into tools as required. There was also evidence for the production or repair of tranchet adzes at the site, which produced a small number of thinning and sharpening flakes.

After the initial removal of the cortex, some of the cores were then used to produce blades and bladelets. The main purpose of the bladelets seems to have been the manufacture of microliths. The careful initial preparation of the cores, rejuvenation of platforms, and probable use of a punch to remove the bladelets shows that considerable care was being taken to obtain the desired bladelet. The presence of microburins and numerous snapped and broken bladelets indicates that the bladelets were subsequently being worked into microliths.

Further evidence for this process at the site are the numerous chips, fragments and shattered pieces which are all produced as a result of the knapping process, and during the manufacture of tools.

Except for the microliths, there are very few other tools in the assemblage. Those that are present comprise scrapers, piercers and burins, and were probably produced as they were required for a very limited range of activities. Amongst the microliths a number have impact fractures and other breakages, which appear to have been discarded with the rubbish in the various pits on the site. The other tools found may also have been used in the repair of hunting equipment, as well as for functional tasks at the campsite, perhaps in the

construction of the camp itself and the processing of food whilst it was being occupied.

The microliths are the only pieces of flintwork that can be used to assist in the typological dating of the assemblage. Obliquely blunted bladelets make up the largest component of the assemblage (43%), with the majority manufactured on narrow bladelets. The geometric types (isosceles triangles, scalene triangles etc) make up 29%, whilst tanged points (14%), backed bladelets (11%) and a single obliquely truncated bladelet (3%) make up the remainder. This mixture of types, some of which are associated with early Mesolithic assemblages, and others normally associated with later Mesolithic assemblages, could either mean that the site has two distinct phases of activity, subsequently mixed, or perhaps that it represents a transitional phase in the middle of the Mesolithic period. Table 5 compares the composition of the Streat Lane microlith assemblage (based on Clark's classification) with that from a number of other sites.

The mean length of the obliquely blunted bladelets at Streat Lane was 21 mm, although this is based on a very small sample of complete microliths. This compares with the mean length of 22 mm for obliquely blunted bladelets from Horsham sites, whilst those from early Mesolithic sites had a mean length of 40 mm (Reynier 1994). The recent excavations at Rock Common, Washington, West Sussex, produced a Horsham tradition microlith assemblage (Harding 2000), and its obliquely blunted bladelets had a mean length of 19 mm. Selmeston is another site that has produced predominantly obliquely blunted bladelets with smaller numbers of geometric microliths and two tanged points (Clark 1934b), but here the obliquely blunted bladelets tend to be much larger, fitting more closely with the early Mesolithic mean length mentioned above.

The microlith assemblage at Streat Lane has similarities with that recovered by surface collection at St. Catherine's Hill, near Guildford in Surrey (Jacobi pers. comm.). At St Catherine's Hill the microliths were predominantly obliquely blunted bladelets, with smaller numbers of backed bladelets, triangles and hollow based points, together with three tanged points, and the conclusion reached was that the assemblage had affinities with the Horsham culture (Gabel 1976). Jacobi (1978, 20) suggested that St. Catherine's Hill could represent 'an early stage in the local evolution of a Horsham technology, or the mixing of Horsham points with an early assemblage that had once been stratified'.

Reynier (1998) suggests that the first Horsham type assemblages appear after *c.* 9000 BP. However, information from the later Mesolithic rock shelter at the Hermitage, High Hurstwood (Jacobi *et al.* 1981), which produced three C14 dates around 7000 BP, suggests that the Horsham tradition could extend into the early part of the later Mesolithic period. The Streat Lane assemblage, despite the presence of the tanged points, has affinities with the Horsham-type assemblages, although the percentage of geometric microliths is not as great as at the Rock Common and Hermitage sites.

Table 5. A comparison of microlith assemblages.

Clark's classification	Streat Lane	Rock Common	St Catherine's Hill	Hermitage, High Hurstwood	Selmeston
	%	%	%	%	%
A	43	28	74	2	53
B	11	17	3	9	10
C	3	1.5	-	-	9
D	29	51	9	88	19
E	-	<1	-	-	1.5
F	-	1.5	6	1	6
G	14	<1	9	-	1.5
Number of microliths	*28*	*397*	*34*	*90*	*136*

Fire-fractured flint

Substantial quantities of fire-fractured flint were recovered from the pits and other contexts across the site. Initially, the pieces of fire-fractured flint were counted, weighed and then discarded. This resulted in the recording of 15,630 pieces of fire-fractured flint from the topsoil and other initial contexts, weighing some 108 kg. In addition, a further 56 litres of fire-fractured flint (uncounted) and weighing approximately 72 kg was recovered from the topsoil contexts.

From the excavated pits, bulk samples amounting to some 543 litres of soil were retained and processed. From these, 222 litres of fire-fractured flint weighing approximately 288 kg was recovered.

FOREIGN STONE

by Mike Seager Thomas

Two stone manuports were recovered during the excavation, neither of which are Sussex stone, but both are water-rolled indicating an origin on either an active or fossil beach.

1. Broken half of a perforated pebble 'macehead' (Fig. 12, no. 71). Fashioned from a large flat, oval-shaped pebble of green, slightly micaceous sedimentary quartzite. Context 2 - topsoil. Weight 50 g.

   This macehead is an implement known from sites of the Mesolithic period in both Britain (Rankine, 1949a, 70–72) and Europe (Clark 1936, 105–6, 145–7). Like many 'maceheads' of similar materials (Evans 1968, 16), it is likely that it was selected for its natural shape and toughness. A thin brown weathering-rind on both the natural and worked surfaces of the stone, but not on the break, shows the latter to be recent, perhaps the result of plough damage. The perforation is hourglass-shaped and reduces from about 16 mm in diameter at the surface of the stone to about 8 mm at its centre. Although ground smooth, pitting around the edge of the perforation suggests it was fashioned by hammering or picking (cf. Rankine 1953, 187). Prior to breakage it would have been located in the middle of the stone.

   The exact use of such 'maceheads' remains uncertain. Owing to a lack of contextual data all current interpretations are direct inferences from individual implements, not all of which need be Mesolithic in date. These include weapons (i.e. maceheads), digging-stick weights, hafted hammer-stones, spindle-whorls, drill-weights etc. (Lane-Fox 1881, pl. xxiv: 22; Palmer 1977, 46; Rankine 1953, 186). None is wholly satisfactory. Firstly, there is no reason why an

interpretation applied to an individual 'macehead' should apply to the type as a whole: a variety of tools with the same morphology and manufacturing technique may be involved. Secondly, evidence for the deliberate selection of hard and, therefore, difficult-to-work materials such as quartzite is ignored. There would have been little point to this if they were intended only as weights. Like these other implements, this 'macehead' lacks a secure context, even though it is associated with typologically Mesolithic material; but pitting on both the end-edge and end-face of the recovered half demonstrates that at some time it was used as a hammerstone.

2. Elongate irregularly-shaped cobble of green micaceous metamorphic quartzite (Fig. 12, no. 72). Context 57. Weight 470 g.

   Though smooth on two faces and both ends, there is no evidence of either deliberate fashioning or of use-wear. Like the 'macehead' it has a thin, brown weathering-rind. Stone manuports of similar size, shape and hardness were found during the excavations of the Farnham (Clark & Rankine 1939, 91) and Blackdown (Rankine 1949b, 194) Mesolithic sites, as well as more recently at Butchers Wood, Uckfield (Butler, forthcoming). Possibly they had a similar role. However, unlike that from Streat Lane, both the Farnham and Blackdown stones are end-battered.

THE CHARCOAL

by Rowena Gale

The charcoal submitted for analysis had been hand-picked during excavation or had been recovered from the wet-sieving and flotation of bulk samples from the four pits (Table 6). The charcoal was mostly extremely degraded and frequently heavily contaminated with reddish (mineral oxide?) deposits. In many instances the poor condition and small dimensions of the charcoal fragments prevented assessment of the maturity of the wood, although it was clear that much of the oak (*Quercus*) charcoal was heartwood.

The results

The results of the charcoal analysis are given in Table 6 and discussed below. The anatomical structure of the charcoal was consistent with the taxa or groups of taxa given below. It should be noted that the anatomical structure of some related taxa is difficult to distinguish with any certainty, for example members of the Pomoideae (*Crataegus, Malus, Pyrus* and *Sorbus*). Similarly, in degraded charcoal, some unrelated taxa can be problematical, e.g. hazel (*Corylus*) and alder (*Alnus*). Classification follows that of *Flora Europaea* (Tutin, Heywood *et al*. 1964–80).

Broadleaf taxa identified:

?Betulaceae. *Alnus* sp., alder

Corylaceae. *Corylus* sp., hazel

Fagaceae. *Quercus* sp., oak

Rosaceae. Subfamilies:

Pomoideae which includes *Crataegus* sp., hawthorn; *Malus* sp., apple;

Pyrus sp., pear; *Sorbus* spp., rowan, service tree and whitebeam. These taxa are anatomically indistinguishable. The charcoal may therefore include one or more of them.

Prunoideae which includes *P. avium*, cherry; *P. padus*, bird cherry, and *P. spinosa*, blackthorn. It is frequently difficult or impossible, as in this instance, to identify to species level.

Charcoal was examined from Pits 1 to 4 (*see* Table 6) and was mostly identified as oak (*Quercus*), hazel (*Corylus*) and the hawthorn/ *Sorbus* group (Pomoideae). *Prunus* was rare and recorded only from Pits 1 and 2. A few fragments of badly degraded charcoal (contexts 26, 36 and 65) were provisionally identified as either alder (*Alnus*) or hazel (*Corylus*), although hazel seems more likely, given the frequency of hazel and absence of alder in other contexts. The species identified from all four pits were remarkably consistent.

A small quantity of charcoal was hand-picked from other contexts, and with the exception of *Prunus*, the taxa identified matched those from the pits.

Table 6. Charcoal from Mesolithic contexts. (The number of charcoal fragments identified is indicated. Key: h = heartwood; hp = hand-picked charcoal.)

Context	*Alnus/Corylus*	*Corylus*	Pomoideae	*Prunus*	*Quercus*
Pit 1					
36	1	-	2	1	12
65 (a)	-	2	-	2	13
65 (b)	1 hp	-	1 hp - 2 hp		
67 (a)	-	3	2	-	5
67 (b)	-	1hp	-	-	1 hp
72	-	2	3	-	21
78	-	16	1	-	21
103	-	-	-	-	2 hp
109	-	3	-	-	6
138	-	4	-	-	5
142	-	4	-	-	5
Pit 2					
37 (a)	-	1	2	-	3
37 (b)	-	-	1 hp 1 hp	10 hp	
Pit 3					
62	-	-	1 hp	-	1 hp
64	-	1	-	-	2
115	-	17	3	-	6
117	-	6	1	-	4
123	-	6	-	-	2
Pit 4					
24	-	1 hp	-	-	10 hp
26 (a)	1	-	3	-	2
26 (b)	-	-	-	-	9 h, hp
48	-	1 hp	1 hp	-	1 hp

Environmental evidence

The site was based not far from the northern edge of the South Downs, probably within, or very close to, the Wealden woodlands. Archaeological evidence from downland sites in southern Britain indicates that, in pre-Neolithic periods, soils on chalk downland would have been considerably deeper than those of today, and capable of supporting dense woodland even on steep slopes (Tittensor 1979).

Over the past decades there have been various studies focused on the ancient woodland environment of the Weald of Sussex and the South Downs. These have been based mainly on pollen analysis and suggest that by 5500 BC the area was dominated by deciduous climax woodland consisting mainly of oak (*Quercus*) with hazel (*Corylus*), although other taxa such as lime (*Tilia*), elm (*Ulmus*), beech (*Fagus*) and alder (*Alnus*) were also present but were probably infrequent or confined to specific tree communities (Pennington 1965; Godwin 1975; Tittensor 1979). Conifers (pine, *Pinus;* yew, *Taxus;* and juniper, *Juniperus*) were rare, as was birch (*Betula*).

The charcoal residues from the Mesolithic site at Streat were dominated by oak (*Quercus*) and hazel (*Corylus*), thereby conforming with the results of the palynological evidence discussed above. It seems probable that the site was sited in a clearing or glade in the woodland with ready access to wood and timber. Although the charcoal was degraded, this was almost certainly the result of post-depositional deterioration, and there was no particular evidence (e.g. fungal hyphae or insect damage) to suggest that firewood was gathered from dead or decayed wood. This does not altogether preclude the use of fallen timber or deadwood, since oak wood (particularly oak heartwood) is extremely durable and it may take up to 100 years for the wood to rot away (O. Rackham pers. comm.). Oak heartwood appeared to be common in the charcoal deposits.

One or more members of the Pomoideae also grew within reach of the site. Likely representatives include hawthorn (*Crataegus*), which would have grown either as a marginal woodland tree or shrub, service tree (*Sorbus torminalis*), or possibly apple (*Malus*) or pear (*Pyrus*). *Prunus* was rare in the charcoal and may have derived from either wild cherry (*P. avium*), a tree that grows typically in woodland margins, or blackthorn (*P. spinosa*), a shrubby species that colonises open areas. Trees such as hazel, hawthorn, apple, pear, wild service, cherry and blackthorn are fruit-bearing and, depending on the season of hunting, may have contributed to the diet of the community.

Radiocarbon dates. (* Calibration: Stuiver *et al.* (1998).)

Sample	Context	Type	Uncalibrated result	Calibrated result*
Beta 144846	**78** in Pit 1	Wood charcoal (bulk sample of various species)	7420±40 BP (13C/12C ratio: –28.1)	6390–6220 BC (95%)
Beta 144847	**115** in Pit 3	Wood charcoal (bulk sample of various species)	7500±40 BP (13C/12C ratio: –28.7)	6430–6240 BC (95%)

Conclusion

The charcoal from (fuel) deposits in pits and layers at the Mesolithic site at Streat was indicative of the predominant use of oak (*Quercus*) and hazel (*Corylus*), together with at least one member of the hawthorn/ service tree group (Pomoideae), and infrequent use of cherry or blackthorn (*Prunus*). These results endorse findings from earlier palynological studies from the region (Pennington 1965; Godwin 1975; Tittensor 1979), which suggest that oak and hazel were the dominant woodland components of the Sussex Weald during the Mesolithic period.

RADIOCARBON DATES

Two radiocarbon dates were obtained using samples of charcoal recovered during the excavation. The charcoal comprised a number of pieces from different species, including oak, that were collected from the bulk wet-sieving of material from these contexts. One sample was from Context 78 in Pit 1, whilst the other was from Context 115 in Pit 3, both of which were well-sealed layers within these pits. These were submitted to Beta Analytic in Florida, USA for analysis. Owing to the poor preservation of the charcoal and degree of charring, the residual samples left after pre-treatment meant that there was only sufficient to undertake AMS analysis. This produced the following results (see radiocarbon table above).

Because the samples had to be bulked to obtain sufficient charcoal for dating, it is accepted that these dates are perhaps not as meaningful as would have been hoped. However, the primary concern was to ensure that the activity from which the charcoal and the associated fire-fractured flint had come was of Mesolithic date, which the dates appear to have done.

THE STREAT LANE SITE IN A MESOLITHIC LANDSCAPE

The Mesolithic landscape at this time comprised a mixed deciduous woodland, which was dominated by oak and hazel. The woodland also included other species of deciduous trees (such as elm and lime), together with fruit-bearing trees and shrubs that would have provided food resources for the hunter-gatherer groups that were exploiting this landscape. This landscape represented a change from the earlier pine-dominated woodland, and may have led to changes in the pattern of settlement and resource exploitation (Holgate 2003). Further east in the Ouse valley itself, and possibly within the range of the same hunter-gatherer group(s) that were using the Streat Lane site, there is evidence for the removal or disturbance of the vegetation cover adjacent to the river (Scaife & Burrin 1983). There is very little evidence for the animals that were living in this woodland, as bone tends not to survive in the acidic local soils, and none was found at Streat Lane. However, analogy with elsewhere in

England suggests that aurochs, deer and wild boar, browsing in woodland glades, would have been the main animals hunted, with other small woodland animals and birds supplementing the diet.

The excavation at the Streat Lane site has produced some conflicting evidence for the activities that were being carried out. The analysis of the flintwork assemblage shows that hunting equipment was being made and repaired at the site, and expedient flint tools were being produced in small numbers. There is little evidence for the large-scale production of implements, such as scrapers, knives and piercers, which would have been used for activities such as the processing of food or hides. Additionally, there is only limited evidence for woodworking activities, with little indication of tranchet adze production or use. If this site had been a longer-stay or base camp, it is likely that there would be a greater variety of flint implements present, and many more of them, whilst the tranchet adzes and picks which are normally found at longer-stay camps in some numbers, are almost totally absent at Streat Lane. The flint assemblage found at this site would normally be accepted as evidence for the presence of a short-stay hunting camp (Butler 2005).

The small shelter discovered at the site would tend to support this idea, as its form of construction would suggest that occupation was both short and temporary. Similar circular structures, with stones holding down a hide shelter, have been proposed elsewhere, for example at Pincevent, in the Paris Basin (Desbrosse *et al.* 2001; Leroi-Gourhan *et al.* 1966). This type of structure would have been relatively quick and simple to construct, and could easily be taken down when the camp was abandoned. The wooden poles and the hide covering could be collected and wrapped into a bundle for transport to the next camp location. Although the shelter seems small, it would have been possible for two people to lie down inside it, one on each side of the central post. There was no evidence for an internal hearth, or for any craft activities such as flint-knapping being carried out within it. The entrance to the structure faced east, away from the prevailing wind, and was also facing towards the adjacent stream.

A number of Mesolithic sites are known along the banks of the Ouse and its tributaries, especially further north where many rock-shelter sites have been found. Small scatters of Mesolithic flintwork have also been found alongside other streams in the area, suggesting that there may be other sites in locations similar to the Streat Lane site. Those sites so far discovered along the banks of the River Ouse itself do appear to meet the expectations of more longer-stay base camps in terms of the variety and type of flint artefacts found (Butler 2000), and may be associated with the clearance of the vegetation cover mentioned earlier.

The Streat Lane site, as a temporary hunting camp, could easily fit into a proposed scheme (after Binford 1983) for the seasonal exploitation of different resources by a single hunter-gatherer group, perhaps based along the River Ouse, and ranging out along its tributaries for hunting expeditions (Holgate 2003). The extent of the remains at the site could be due to repeated visits to the site over many years, perhaps even many decades; the archaeological evidence tends to support repeated visits rather than a single longer-term event. The location of the site next to a stream and perhaps at some important, and therefore 'persistent place', within the landscape may have been the reason for repeated visits (Barton *et al.* 1995).

The pit features provide the contradictory evidence against this site being interpreted as a short-term hunting camp. The pits, filled with burnt flint and charcoal, would suggest that cooking was a primary activity that was being carried out at the site. The burnt flints could have been used as pot-boilers to heat water, which was perhaps held in a pit or organic container, or more likely they could have been used to heat an oven (Wood 2001). However, there is no surviving evidence of burning (such as burnt surfaces or hearths) within the pits or elsewhere on the site, so perhaps any oven pits are outside the area excavated, or the burning may not have left any trace (Canti *et al.* 2000). Evidence for the processing of food resources and cooking at the site may have come from animal remains, but there is a complete lack of any bone at the site owing to the acidic nature of the soil. If the site is interpreted as a hunting camp, as suggested by the flintwork assemblage, would we really expect to find evidence for cooking on the scale that appears to be the case here, even if the site was being revisited on numerous occasions. So was a major function of this site cooking, or was something else going on here?

Such large deposits of fire-fractured flint or other burnt stone are rare on Mesolithic sites,

although they become much more common in later prehistory, and recent fieldwalking in the Ouse valley has located other concentrations of fire-fractured flints associated with Mesolithic flintwork. Other Sussex Mesolithic sites, for example Hassocks and Selmeston, have produced evidence for pits associated with Mesolithic flintwork. However, there is no record of these pits containing quantities of fire-fractured flints or other burnt stone. It is clear that the fire-fractured flint is contemporary with the Mesolithic activity at this site, as it is directly associated with the charcoal from which the C14 dates were obtained, and it is also directly associated with Mesolithic flintwork. Furthermore, there are no intrusive later prehistoric artefacts from the site.

Taking all the evidence discussed above, it does appear that something unusual, or at least not recognised elsewhere, may have been occurring at this site. We have:

1. a worked flint assemblage resembling that from a short-stay hunting camp;
2. a temporary shelter;
3. a number of pits originally excavated for an unknown purpose;
4. huge quantities of burnt flint that has been discarded into the pits;
5. no evidence of hearths or ovens;
6. repeated visits to the site over an unknown period of time.

Perhaps part of the problem of not recognising the purpose of this site is that our studies have become too focused on the differences between hunting camps and base camps. Although the basic premise of this division of Mesolithic hunter-gatherer sites into these two categories is a good starting point, it is not fully supported by either the archaeological or ethnographic evidence (Spikins 1999). However, even when this problem has been recognised, there has been a failure to progress the argument beyond the economics of hunter-gatherer communities, and other aspects of these societies have not been considered adequately. The use of terms such as 'task-specific' or 'resource-exploitation' sites does not really help, unless these are associated with identified tasks, e.g.the exploitation of a specific resource such as flint. There must have been a range of other activities that these hunter-gatherer groups carried out which were perhaps more to do with social interaction than simply economics. These may have left little or no trace in the archaeological record, but where they do, they do not fit neatly into the existing categories of site that are recognised today. Perhaps the Streat Lane site falls into this category, and we should therefore be cautious about allocating to it any label that presupposes a full understanding of what was happening here.

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ADS supplement

Information within appendix on ADS website can be found at http://ads.ahds.ac.uk/catalogue/library. Follow the link to *Sussex Archaeological Collections* and select Volume 145:

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REFERENCES

Alexander, J., Ozanne, P. C. & **Ozanne, A.** 1960. Report on the investigation of a round barrow on Arreton Down, Isle of Wight, *Proceedings of the Prehistoric Society* (hereafter *Proc. Prehist. Soc.*) **26**, 263–302.

Barton, R. N. E. 1992. *Hengistbury Head, Dorset*, vol. 2: *The Late Upper Palaeolithic & Early Mesolithic Sites*. Oxford: University Committee for Archaeology, Monograph No. **34**.

Barton, R. N. E., Berridge, P. J., Walker, M. J. C. & Bevins, R. E. 1995. Persistent places in the Mesolithic landscape: an example from the Black Mountain Uplands

of South Wales, *Proc. Prehist. Soc.* **61**, 81–116.
Binford, L. R. 1983. *In Pursuit of the Past*. Berkeley (CA): University of California Press.
Butler, C. 1989. An Early Mesolithic site and later flintwork from Hassocks, West Sussex, *Sussex Archaeological Collections* (hereafter *SAC*) **127**, 230–35.
— — 1998. Mesolithic Streat, *Sussex Past & Present* April, 6.
— — 2000. Mesolithic and later flintwork from Moon's Farm, Piltdown, East Sussex, *SAC* **138**, 222–4.
— — 2001. A Mesolithic and later prehistoric flintworking site at East and West Hills, Pyecombe, West Sussex, *SAC* **139**, 7–25.
— — 2005. *Prehistoric Flintwork*. Stroud: Tempus Publishing Ltd.
— — forthcoming. The flintwork in a Mesolithic site at Finglesham, *Archaeologia Cantiana*.
Butler, C. & **Holgate, R.** 2002. The flintwork, in L. Barber & M. Bennell, Excavations at Redhill, in D. R. Rudling (ed.), *Downland Settlement and Land Use*. London: English Heritage, 98–103.
Canti, M. & **Linford, N.** 2000. The effects of fire on archaeological soils and sediments: temperature and colour relationships, *Proc. Prehist. Soc.* **66**, 397–404.
Clark, J. G. D. 1934a. The classification of a Mesolithic Culture: the Tardenosian of Horsham, *Archaeological Journal* **90**, 52–77.
— — 1934b. A Late Mesolithic settlement at Selmeston, Sussex, *Antiquaries Journal* **14**, 134–58.
— — 1936. *The Mesolithic Settlement of Northern Europe*. London: Cambridge University Press.
Clark, J. G. D. & **Rankine, W. F.** 1939. Excavations at Farnham, Surrey (1937–38): the Horsham culture and the question of Mesolithic dwellings, *Proc. Prehist. Soc.* **5**, 61–118.
Desbrosse, R. & **Kozłowski, J.** 2001. *Les habitats préhistoriques*. Paris: Éditions du C.T.H.S.
Evans, K. J. 1968. Stone implements in Sussex, *Sussex Notes & Queries* **17**, 15–21.
Gabel, G. 1976. St Catherine's Hill: a Mesolithic site near Guildford, in *Research Volume of the Surrey Archaeological Society* No. **3**. Guildford: Surrey Archaeological Society, 77–102.
Godwin, H. 1975. *A History of the British Flora*. Cambridge: Cambridge University Press. (2nd edition.)
Harding, P. 2000. A Mesolithic site at Rock Common, Washington, West Sussex, *SAC* **138**, 29–48.
Holgate, R. 2003. Late Glacial and Post-Glacial hunter-gatherers in Sussex, in D. Rudling (ed.), *The Archaeology of Sussex to AD 2000*. Kings Lynn: University of Sussex, Heritage Marketing & Publications Ltd, 29–38.
Jacobi, R. 1978. The Mesolithic of Sussex in P. L. Drewett (ed.), *Archaeology in Sussex to AD 1500*. London: CBA Research Report No. **29**, 15–22.
Jacobi, R. & **Tebbutt, C. E.** 1981. A Late Mesolithic rock shelter site at High Hurstwood, Sussex, *SAC* **119**, 1–36.
Lane-Fox, A. 1881. Excavations at Mount Caburn Camp, near Lewes, conducted in September and October 1877, and July 1878, *Archaeologia* **46**, 423–95.
Leroi-Gourhan, A. & **Brezillon, M.** 1966. L'habitation magdalénienne n° 1 de Pincevent près de Montereau (Seine-et-Marne), *Gallia Préhistoire*, t. **11/2.**
Palmer, S. 1977. *The Mesolithic Cultures of Britain*. Poole: Dolphin Press.
Pennington, W. 1965. *The History of British Vegetation*. London: Edinburgh University Press.
Rankine, W. F. 1949a. Stone 'maceheads' with Mesolithic associations from southeast England, *Proc. Prehist. Soc.* **15**, 70–76.
— — 1949b. Pebbles of non-local rock from Mesolithic chipping floors, *Proc. Prehist. Soc.* **15**, 193–4.
Reynier, M. J. 1994. A statistical analysis of ten early Mesolithic sites in south east England, in N. Ashton & A. David (eds), *Stories in Stone*, Lithic Studies Society Occasional Paper **4**, 199–205.
— — 1998. Early Mesolithic settlement in England and Wales: some preliminary observations, in N. Ashton, F. Healy & P. Pettitt (eds), *Stone Age Archaeology: Essays in Honour of John Wymer*, Lithic Studies Society Occasional Paper **6**, 174–84.
Saville, A. 1980. On the measurement of struck flakes and flake tools, *Lithics* **1**, 16–20.
Scaife, R. G. & **Burrin, P. J.** 1983. Floodplain development in and the vegetational history of the Sussex High Weald and some archaeological implications, *SAC* **121**, 1–10.
Spikins, P. 1999. *Mesolithic Northern England*, British Archaeological Reports British Series **283**. Oxford: BAR.
Stuiver, M., Reimer, P. J., Bard, E., Burr, G. S., Hughen, K. A., Kromer, B., McCormac, G., van der Plicht, J. & **Spurk, M.** 1998. INTCAL98 radiocarbon age calibration, *Radiocarbon* 40(3), 1041–83.
Tittensor, R. 1979. Evolution of the landscape, in A. Down, *Chichester Excavations IV*. Chichester: Chichester Excavations Committee, 1–24.
Tutin, T. G., Heywood V. H., Burges N. A., Moore D. M., Valentine D. H., Walters S. M. & **Webb D. A.** 1964–80. *Flora Europea* I–V. Cambridge: Cambridge University Press.
Wood, J. 2001. *Prehistoric Cooking*. Stroud: Tempus Publishing Ltd.